sample vital registration project in the Philippines

by Wilhelm Flieger

From 1 January 1971 to 30 June 1974 the National Census and Statistics Office (NCSO) of the Philippines conducted a nationwide Sample Vital Registration Project. The aims of this endeavor were to obtain better information on vital events and to provide national planning agencies with more reliable demographic baseline data. The project utilized a dual-records approach for data collection, and the Chandrasekar-Deming technique for estimation of unreported and unregistered events. After the project terminated its field operations in June 1974, efforts were started to appraise the achievements of the project. The latter activities culminated in a conference held in Makati, Rizal, 15-16 May 1975, which was jointly sponsored by the NCSO, the Population Commission, and the Population Center Foundation of the Philippines.

The bases of the extensive discussions that took place during the conference were twelve papers, most of them prepared by members of the project staff who had been in charge of data collection and tabulation. The papers covered such topics as administrative difficulties experienced by the regional offices and field staffs, conceptual and operational problems arising from a dual-records system, assessment of the efficiency of the various reporting agencies involved, evaluation of the reliability of the data collected, interpretation of data, and the presentation of regional birth, death, and migration estimates.

Fertility and mortality rates in the Philippines

Data, adjusted for missed events and covering permanent residents only, showed that the country's average crude birth rate for the survey years 1971-73 was in the neighborhood of 40 per thousand population. The crude death rate was found to be a little higher than ten per thousand, resulting in an average annual population growth rate of 30 per thousand. The latter figure is more or less in line with the average annual intercensal growth rate for the decade of the 1960s, which, according to NCSO, was 29 per thousand.

For individual survey years, the data indicate a decline in the birth rate from 41.9 in 1971 to 36.7 in 1973. Mortality trends point in the opposite direction; the crude death rate increased from 7.5 in 1971 to 10.2 in 1973. The latter obviously is the result of improved registration rather than an actual increase in mortality. When we use estimates of total deaths obtained through the application of the Chandrasekar-Deming technique as standard, the estimated level of death registration rose from 70 percent in 1971 to 77 percent in 1973. For births, the level of registration improved similarly, from 67 percent in 1971 to 79 percent in 1973. It is questionable, however, whether national birth and death rates extracted from survey data reflect reality. Scrutiny of 1973 regional rates, for example, shows variations between 29.2 and 41.3 for births, and 5.7 and 12.8 for deaths.

Dr. Wilhelm Flieger, left, is shown at the Workshop on Measuring Socioeconomic Status, held at the East-West Center last December. Dr. Donald Treiman is at right. Dr. Flieger is Chairman of the Department of Sociology-Anthropology and Director of the Office for Population Studies at the University of San Carlos, Cebu City, Philippines. In addition to his recent involvement with NCSO's Sample Vital Registration Project, described on these pages, Dr. Flieger has been regional advisor for the Council for Asian Manpower Studies (CAMS). He is co-author, with Nathan Keyfitz, of two major books on demographic methods, and he recently edited, with Peter C. Smith, a volume on the analysis of data from the 1969 National Demographic Survey in the Philippines.
Regional variation in vital rates

It is known that the different geographic regions of the country do not display uniform levels of fertility—a fact that has been documented by the National Demographic Surveys of 1968 and 1973—and there is every reason to believe that the same holds true for deaths. Mortality is largely a function of living standards, and living standards in the Philippines vary from region to region. Regional mortality levels estimated from survey data do not quite fit this pattern. For example, large portions of Southern Mindanao are among the less developed areas of the country, but its crude death rate is only 7.9, the second lowest after metropolitan Manila of the ten regions of the country. Because of such discrepancies, it is probably correct to assume that the national crude death rate is somewhat higher than the survey data indicate and that, if we consider the population growth rate of 30 per thousand as approximately correct, the national crude birth rate must also be higher than survey data show.

Urban-rural differentials

Further indications that the project estimates of national birth and death rates are probably a little too low are the urban-rural fertility and mortality differentials that the survey was able to discover. For the year 1973, the Philippine rural crude birth rate of 39.4 per thousand was 22 percent higher than the urban rate, and the rural crude death rate of 10.2 was higher by the same amount than its urban counterpart. Although most of the estimated regional crude rates are higher than the urban ones, this pattern does not hold for all ten regions. Data for Central Luzon yield a slightly higher urban than rural crude birth rate, and for mortality the “expected” trend does not appear in the regions of Central Luzon, Bicol, and the Western Visayas. Since urban data tend to be more reliable than rural ones, and since the rural death rates of two of the three regions just named are extremely low when compared with those of other regions, it is likely that regional rural rates, which do not come up to corresponding urban levels, still reflect acute underenumeration.

Achievements of the survey

Even though the survey results cannot claim to be perfect, they nevertheless represent a substantial improvement over fertility and mortality rates which the country’s “regular” vital registration system has been able to provide. For the year 1972, the latter yielded a crude birth rate of approximately 26 per thousand population, and a crude death rate of 7.5 per thousand. The improvements brought about through sample vital registration are even more noteworthy when we consider the difficulties with which the project had to cope. There were problems with the reporting agencies involved in the dual-records system. Some of the barrio captains of the sample barrios, who had to canvass households under their jurisdiction every month, did not understand their tasks or performed them without the requisite care; some local civil registrars in sample municipalities or cities had not updated their registry books for years. Other problems were the identification of boundaries of sample areas, the definition of “residents” or “migrants,” and the large-scale population movements in the wake of slum clearings in cities, or deteriorating peace and order situations in Mindanao, events which upset the carefully worked-out sampling frame.

The success of the project cannot be adequately measured by looking only at the data collected and the estimates which they yield. There are other long-range benefits which undoubtedly will make themselves felt in the future. One such benefit should accrue from the campaign to create awareness of the importance of vital registration which the National Census and Statistics Office undertook on a nationwide scale, and to which the project staff contributed through its continuous presence and survey work in the sample areas. A second benefit should result from the fact that the project was able to develop a core of competent field personnel spread throughout the country, on which NCSO can rely in the future to improve its data collecting activities in the provinces.

The proceedings of the May conference will be published by NCSO and made available for distribution.
JAPAN

- The 1975 Population Census of Japan was conducted successfully, reports Correspondent Hirohiko Koyama, Assistant Chief of the Population Census Section of Japan's Bureau of Statistics. He writes that the field enumeration was carried out between 24 September and 5 October. "During the week prior to the census date, 24 to 30 September, about 670,000 enumerators visited all the households in their enumeration districts to distribute the mark-sheet questionnaires," said Koyama. Households were requested to give information as of the first of October, and enumerators visited each household a second time between October first and fifth to collect the completed questionnaires. The mark-sheet questionnaires, used for the first time in a Japanese population census, are filled out by households themselves and fed directly into an optical mark reader.

After all the schedules have been collected, prefectoral government officials forward them and other related documents submitted by municipal offices to the Bureau of Statistics. Koyama said that the first release of census results is expected by the end of December. The first report will contain a preliminary count of the population by sex and household by prefectoral, cities, wards, towns, and villages.

REPUBLIC OF CHINA

- According to Newsletter Correspondent Tun-yih Lu, plans have been completed for the 1975 Sample Census of Population and Housing of the Taiwan-Fukien area, to be taken 16 December 1975. A 5 percent sample of households (about 148,000) will be enumerated. A two-stage cluster sampling method is being used to select the family households; for nonfamily households, a systematic sampling method will be employed. The survey items for the population part of the questionnaire cover the nature of the household, name, designation, sex, birth date, nationality or domicile, marital status, place of residence five years ago, educational attainment, and economic characteristics; for the housing census, questions will be asked about the main use of the building, time of construction, category of building, number of rooms and total floor space, housing facilities, and tenure or ownership. The preliminary report of the census is scheduled for publication next January, and the final report will be published in November 1976.

- The 1975 Census of Agriculture and Fisheries will be taken in January 1976. A sampling ratio of 5 percent of the total farm and fishing households will be selected by the two-stage systematic sampling method. Questions will be asked about the agricultural population and employment, land, crops, livestock, poultry, farm equipment and machinery, fertilizers and pesticides, the fishing population and employment, fishing vessels and equipment, and fish farms and operation.

- Other items from Taiwan: The 1976 Census of Industry and Commerce of the Taiwan-Fukien area is currently being prepared by a census planning working group. The revision of the national standard classification of industry and occupation has been completed by the Bureau of Statistics. The Bureau is still working on the standard classification of commodities.

HONG KONG

- A letter from Correspondent Joseph M.K. Lee says that Hong Kong has successfully completed its pilot census and is now working on the final program for next year's By-Census. Plans have been made for census publicity, recruitment and training of census field staff, geographic updating of all structures (permanent and temporary) for sampling purposes, special classes in enumeration procedures, and the census tabulation program.

On the basis of the preliminary results of the pilot census, continues Lee, the questionnaire has been modified. New questions to be included in the By-Census are family composition (derived from answers to relationship to head of household), address (of household) five years ago, reasons for moving, technical/vocational training, field of training, personal income (earnings and other cash income), disabilities, and maternity history. The Census and Statistics Department is testing a set of imputation rules with the pilot census data; the fully tabulated results should be available in December.

INDIA

- An in-service training program in demography and statistics for staff members of the Registrar General and Census Commissioner's office has been organized. Assistant Registrar General K.K. Chakravarty reports that the first group of trainees has completed the course. Chakravarty also noted that suggestions for India's 1981 Census are being received.

PAKISTAN

- "Issues in Demographic Data Collection in Pakistan" was the topic of a seminar held 11-13 August at Rawalpindi. Census Commissioner Brig. Abdul Latif reports that a number of distinguished research workers participated in the meeting, including Dr. Karol J. Krotki, Department of Sociology, University of Alberta, and Dr. Sultan S. Hashmi, Chief, General Demography Section, ESCAP, Bangkok. Thirteen papers on different population topics were presented during the seminar. One of the papers, by Mr. G. Mujtaba Mirza, Joint Census Commissioner, and Mr. S. Sajjah Hussain, Assistant Census Commissioner, used Rawalpindi data from the Housing, Economic, and Demographic Survey of Pakistan to study the application of the own-children technique of fertility estimation. According to Brig. Latif, the results suggest construction of accurate life tables for Pakistan. Further study of this technique will be conducted when tabulations of other districts become available. All the papers from the seminar are now being edited by Drs. Krotki and Hashmi and will be published as a book.

- More news from Pakistan: The Census Organization and the Registration Organization of the government's Interior Division have been merged and are now known as the Census and Registration Organization. District Census Reports for Bannu and D.I. Khan districts of North-West Frontier Province have just been published; six more district reports from that province are in press and should appear shortly. Dr. Charles E. Nobbe, Ford Foundation advisor to the Census Organization, completed a year in Pakistan and has left to take an assignment in Canada.
Student Assistant David Pun, left, with Alice Harris in the EWP Resource Materials Collection.

(continued from page 12)

seeking to improve their knowledge of fertility behavior, I would like to touch briefly on some of the highlights of the report.

Impetus for the WFS began in 1971 when members of the ISI expressed an interest in becoming involved in population research. Dr. R.T. Ravenholt, Director of the Office of Population, U.S. Agency for International Development, suggested that the ISI develop a program to assess the current state of fertility knowledge in countries throughout the world and to coordinate and standardize the numerous fertility surveys being conducted at that time. The U.S. Bureau of the Census had identified no fewer than 222 national fertility surveys that had been taken during the period 1960-73, and another 40 to 60 more were planned for the years 1974-77. Few of the surveys had been designed for scientific purposes or with international comparability in mind. With the technical and financial assistance of a program like the World Fertility Survey it would be possible to make future fertility surveys of much greater value to policymakers, development planners, and demographic experts.

The ISI agreed to develop plans for a World Fertility Survey with the collaboration of the United Nations and the International Union for the Scientific Study of Population. Funds for the WFS were provided by the United Nations Fund for Population Activities and the Agency for International Development. The WFS was undertaken as a particularly appropriate activity for 1974, World Population Year. Population researchers and development planners endorsed the WFS, and the World Population Conference, meeting in Bucharest in August 1974, included an invitation in its World Plan of Action for all countries to participate in the WFS.

The three fundamental purposes of the WFS are: to help countries to acquire the data that will enable them to describe and interpret their country’s level of fertility; to increase national capacities for fertility and other demographic survey research, particularly in developing countries; and to collect and analyze data on fertility that are internationally standardized and therefore permit comparative research from one country to another.

To achieve these goals the WFS has invited interested countries to participate in the program by conducting independent, scientifically designed surveys of households selected to provide a probability sample capable of yielding national estimates. Each survey would be adapted to local needs and situations, but each would have WFS assistance and would use a WFS-developed core questionnaire and added optional modules for obtaining information on economic level or mortality.

During the pre-project phase (January–June 1972), the ISI publicized the proposed WFS at regional meetings of demographers and statisticians and took preliminary steps to enlist the participation of countries. Two meetings of the Technical Advisory Committee in July 1972 examined the feasibility and desirability of such a program and made recommendations on strategies for carrying it out.

The project development phase lasted from July 1972 to July 1974. During this time, Sir Maurice Kendall was appointed Project Director, his staff was recruited, and offices were established in London as well as at the Hague, Netherlands. Permanent committees were set up to advise the project. The WFS was publicized through distribution of a newsletter, a promotional brochure, and a series of occasional scientific papers which assessed the state of fertility surveys and provided basic prototype documentation for use by countries participating in the WFS. A core questionnaire, which included a household schedule and a fertility/fertility regulation module, was developed and pretested, as were other modules on abortion, economic variables, and mortality information. A special questionnaire was prepared for countries with low fertility. Manuals for use in conducting the survey and guidelines for country reports were prepared and distributed. WFS officials visited numerous countries and made formal arrangements for participation with Fiji, Thailand, Malaysia, Japan, Jamaica, Guyana, and several other countries.

Even before the project implementation phase began in January 1975, several countries had begun to make survey plans. The pilot survey carried out in Fiji February–April 1974 has been tabulated and the results are being analyzed. Occasional paper no. 15, The Fiji Fertility Survey: a Critical Commentary, published in April 1975, explains some of the problems encountered in taking the first sample survey. Lessons learned in the Fijian experience have been incorporated into later surveys to improve basic documents or survey methodology. The WFS has established liaison with other organizations interested in fertility and household surveys to avoid duplication of efforts. As the project implementation phase continues, more countries are expected to join the program.

The WFS recommends that each country participating in the survey prepare two reports, the first describing the field work and presenting basic results and the second evaluating the basic measures in more detail and utilizing multivariate analysis, Guidelines for Country Report No. 1, published in February 1975, offers an outline for organizing the first report and proposes for inclusion five groups of tables: nuptiality and exposure to childbearing, fertility, contraceptive knowledge and use, preferences for number and sex of children, and use of contraception as related to fertility preferences.

At present the WFS sees a need to continue its work beyond 1977, the target end for the implementation phase. My brief summary cannot do justice to the extensive publications and varied activities undertaken by the program. An excellent explanation of WFS survey methodology by Albert Markwardt appears in the April 1975 issue of Population Index. Anyone wishing to obtain a copy of the progress report or other WFS publications should write the Information and Publications Office, International Statistical Institute, 428 Prinses Beatrixlaan, the Hague-Voorburg, Netherlands.
DE FACTO POPULATION ESTIMATES AND THE DEMOGRAPHY OF NONRESIDENT POPULATION

by Robert C. Schmitt

Editor's Note: Counting the de facto population, not just the usual residents, may make a big difference in the population totals for a place with a large number of transients like Hawaii. Robert Schmitt explores the implications of de facto data in this technical note. Schmitt is State Statistician for Hawaii and a member of the Commission on Population and the Hawaiian Future. The author of many publications on current and past statistics of Hawaii, Schmitt is responsible for coordinating all statistics gathered by state governmental agencies. He earned his B.A. and M.A. in Sociology at the University of Cincinnati and worked on a doctorate at the University of Michigan before coming to Honolulu in 1947.

The concept of de facto population is little used and seldom appreciated in the United States. Since its inception, the decennial census has been conducted on a "usual place of residence" basis, chiefly because such a definition is more satisfactory for census use in congressional apportionment. Postcensal estimates, whether for cities, states, or the nation as a whole, have similarly been made on a resident basis, with little or no consideration of de facto differences. Although demographers have from time to time discussed the advantages of de facto data, there seems to be little evidence of a groundswell for the greater use of this concept.

Admittedly, de facto population estimates for most states and metropolitan areas would be neither easy to make nor particularly useful after completion. The importance of the concept is obviously greatest for resort areas, places with marked seasonal employment patterns, and the like; for much of the United States, however, there would probably be little difference between de facto and resident totals. Either way, methodological problems of estimation would be critical. These statistical difficulties would be compounded if an effort were made to go beyond simple totals by broad geographic area, to investigate seasonal changes or population composition.

It is nonetheless obvious that nonresident populations may possess their own unique demography, clearly distinguishing them from the corresponding resident groups. Casual observation suggests that the nonresident population—tourists, short-term workers, and other transients—and the resident population often differ appreciably in number, geographic distribution, fertility and mortality rates, age, race, and sex composition, and perhaps other characteristics as well. For most areas, unfortunately, no exact information on the extent of these differences is available.

One of the few jurisdictions with the data needed to compare resident and nonresident populations with any degree of exactitude is Hawaii. Large and fluctuating military and tourist populations and a growing legislative interest in migration controls have created a strong need for continuing estimates of both resident and de facto population. More than most states faced with such problems, Hawaii has been able to develop the needed data, largely because of its insular geography, centralized governmental structure, and long tradition of comprehensive statistical reporting.

Consequently, Hawaii is probably unique among the fifty states in its continuing program of resident and de facto population estimates.

These estimates are regularly made by state agencies, using data obtained from the state's comprehensive system of demographic accounts. Postcensal estimates of resident population are developed by the Department of Health and the Department of Planning and Economic Development in conjunction with the U.S. Bureau of the Census, under the Federal-State Cooperative Program for Local Population Estimates. Vital statistics are compiled and published in considerable detail by the Department of Health. Passengers arriving from the Mainland United States are surveyed by the Hawaii Visitors Bureau, and statistics on arrivals from foreign countries are compiled by the U.S. Immigration and Naturalization Service. Data on population characteristics—age, sex, race, and mobility, among others—are obtained by the Department of Health as part of an ongoing sample survey, the Hawaii Health Surveillance Program survey.

Estimates of the number of visitors present and number of residents absent are based chiefly on the Hawaii Visitors Bureau survey of passengers arriving from the Mainland. Each passenger is asked to complete, while in transit, a combined agricultural declaration and passenger information form. This form contains questions on visitor status (that is, whether the person is a visitor to Hawaii, an intended resident, or a returning resident), age, sex, place of residence, intended length of stay, and other items. Combined with data from the Immigration and Naturalization Service reports on travel between Hawaii and foreign countries, this survey provides data on both the number and the characteristics of visitors, in-migrants, and returning residents.

The resulting estimates reveal wide and sometimes unexpected differences between resident and de facto populations, in composition as well as in total numbers. Comparisons of this nature have heretofore been unavailable, at least in such detail, for states and metropolitan areas.

Robert Schmitt, left, chats with EWPI Research Associate Robert Gardner at one of the Institute's Population Census conferences.
In these estimates, it should be noted, the resident population is defined exactly as in the decennial census, and accordingly includes all members of the armed forces stationed in Hawaii, whether ashore or aboard ships in island waters, and all of their dependents in the state. Military personnel and their dependents differ significantly from the rest of the population in a number of demographic, social, and economic characteristics, and their exclusion from the resident population would further magnify the contrast between resident and de facto groups.

The population of Hawaii on 1 July 1972 was approximately 816,000 on a resident basis and 858,000 on a de facto basis. The resident total included 52,000 members of the armed forces, 66,000 military dependents and 698,000 civilians other than military dependents. Approximately 50,300 visitors were present and 8,600 residents were absent at any given time during the year. These last two figures, unlike the resident population estimates, were calculated as annual averages centering on the estimate date. Growth during the 27-month period following the 1970 census was significantly different for the two types of population. The resident total increased by 46,000 or 6.0 percent; the de facto total, by more than 60,000 or 7.6 percent.

Data on components of population change for the two types of estimate differed chiefly in net migration levels. Births during the 27-month period numbered 35,700 on a resident basis and 35,900 on a place of occurrence basis; deaths, respectively 9,200 and 9,700; and net in-migration, 19,700 and 34,400. Unrounded data appear in Table 1.

Table 1 Resident and De Facto Population of Hawaii and Components of Population Change: 1970-72

<table>
<thead>
<tr>
<th>Basis</th>
<th>Population&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Increase, 1970-72</th>
<th>Components of change, 1970-72</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 July 1972</td>
<td>1 April 1970</td>
<td>Number</td>
</tr>
<tr>
<td>Resident</td>
<td>816,149</td>
<td>769,913</td>
<td>46,236</td>
</tr>
<tr>
<td>De facto</td>
<td>857,844</td>
<td>797,308</td>
<td>60,536</td>
</tr>
</tbody>
</table>

<sup>a</sup> De facto total includes visitors present and excludes residents temporarily absent; estimates for these groups are annual averages centered on the estimate date.

Crude birth and death rates computed on the two bases were quite close. Resident births per 1,000 residents in 1972 numbered 18.8, compared with a rate of 18.0 computed from place of occurrence data for births and de facto population. The crude death rate was 5.2 on both bases. Further detail is given in Table 2.

Table 2 Resident and De Facto Births and Deaths: 1972

<table>
<thead>
<tr>
<th>Basis</th>
<th>Births</th>
<th>Deaths</th>
<th>Per 1,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Births</td>
</tr>
<tr>
<td>Residence</td>
<td>15,364</td>
<td>4,244</td>
<td>18.8</td>
</tr>
<tr>
<td>Occurrence</td>
<td>15,413</td>
<td>4,483</td>
<td>18.0</td>
</tr>
</tbody>
</table>

When fertility and mortality were separately computed for residents and nonresidents, however, some perplexing differences appeared (see Table 3). Birth rates, whether based on total population or on the number of women of childbearing age, were about one-tenth as high for nonresidents as for residents. The infant death rate was five times as large. Age-specific death rates for nonresidents far exceeded those for residents below age 40, then dropped military personnel seem to account for a disproportionate share of the automobile accidents, drownings, and other accidental deaths occurring in the state. They also suspect that some of the military and military dependent deaths classified as nonresident events refer to persons actually stationed in the islands, and thus more properly classed as resident.

De facto population exceeded resident population in every month of 1972, with the relative difference greatest in February and least in January. The monthly estimates, reported in Table 4, were based on monthly data on births, deaths, in-migration, visitors present, and residents absent; out-migration, known only on an annual basis (as a residual) was assumed to occur evenly throughout the year.

Contrasts were far greater on a geographic basis. Among the four counties of the state, the ratio of de facto to resident population in 1972 was lowest for the City and County of Honolulu—the most populous county, with four-fifths of the resident total—and highest for Kauai, the least populous. For all four, however, the de facto estimate exceeded the resident figure, by amounts ranging from 4.2 to 12.4 percent. Most of the visitors present were concentrated in Waikiki, a 600-acre resort area 3% miles from downtown Honolulu. As a result, de facto population surpassed the

Table 3 Resident and Nonresident Birth and Death Rates, by Age: 1970

<table>
<thead>
<tr>
<th>Vital rates</th>
<th>Residents</th>
<th>Nonresidents&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Births</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per 1,000 population</td>
<td>21.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Per 1,000 women, 15-44</td>
<td>95.7</td>
<td>9.4</td>
</tr>
<tr>
<td>Deaths under 1 year per 1,000 live births</td>
<td>19.1</td>
<td>92.3</td>
</tr>
<tr>
<td>Deaths per 1,000 population</td>
<td>5.2</td>
<td>6.1</td>
</tr>
<tr>
<td>Under 10 years old</td>
<td>2.4</td>
<td>8.3</td>
</tr>
<tr>
<td>10 to 19 years old</td>
<td>0.6</td>
<td>4.0</td>
</tr>
<tr>
<td>20 to 29 years old</td>
<td>0.7</td>
<td>5.2</td>
</tr>
<tr>
<td>30 to 39 years old</td>
<td>1.6</td>
<td>2.5</td>
</tr>
<tr>
<td>40 to 49 years old</td>
<td>3.2</td>
<td>2.9</td>
</tr>
<tr>
<td>50 to 59 years old</td>
<td>8.5</td>
<td>4.8</td>
</tr>
<tr>
<td>60 years old and over</td>
<td>35.3</td>
<td>18.6</td>
</tr>
</tbody>
</table>

<sup>a</sup> Annual averages, 1968-72. Subject to misreporting of residence for events occurring to military personnel and dependents.

well below the corresponding resident rates. It is not surprising, of course, that women in their ninth month of pregnancy and oldsters with terminal cancer or cardiac problems are relatively underrepresented among Waikiki vacationers. The strikingly high nonresident death rates in the younger age groups are far more mystifying. Although no effort was made to disaggregate these deaths by cause, Department of Health personnel have noted that transient
Visitors from Japan are shown above as they arrive in Honolulu. More than fifty thousand nonresidents are present in Hawaii at any given time. The accompanying article examines the demographic characteristics of nonresidents and compares them with residents. (Photo by Leo Char courtesy of Pan American World Airways.)

The resident total in Waikiki by 172 percent, while elsewhere in the City and County of Honolulu the two types almost exactly balanced.

The foregoing geographic data should not be confused with estimates of “daytime population.” No effort was made, for example, to compute the number of persons who live elsewhere in Honolulu but work, shop, or seek recreation in Waikiki. Strictly speaking, of course, such local visitors to the area are part of the de facto total, at least during part of the day.

Composition of the de facto population varies considerably from that of the resident population. Rough estimates for the two groups, based on the 1970 decennial census, the 1971 Hawaii Health Surveillance Program survey, and the Hawaii Visitors Bureau survey of passengers arriving from the Mainland, are shown by age, sex, and race in Table 5.

The median age of the de facto population in 1972 was 28.1 years, compared with 25.0 for the resident population. The median was 44.7 for visitors present and 32.9 for residents temporarily absent. Although de facto totals exceeded resident totals in all age groups, the excess was quite small under 20 years of age (less than 1 percent) and quite significant past 40 (over 10 percent).

Sex ratios were likewise different. There were 108 males per 100 females in the resident population, 80 among the visitors present, 126 among the absent residents, and 106 males per 100 females in the de facto population.

Shifting to a de facto basis similarly alters ethnic data. Approximately 31 percent of the resident population in 1972 was Caucasian, 25 percent was Japanese, and 44 percent was either Hawaiian, Filipino, Chinese, Korean, Negro, Samoan, or mixed. Residents temporarily out of state presumably had much the same composition. Perhaps seven-

<table>
<thead>
<tr>
<th>Month</th>
<th>Resident population</th>
<th>Visitors present</th>
<th>Residents absent</th>
<th>De facto population</th>
</tr>
</thead>
<tbody>
<tr>
<td>March</td>
<td>816,149</td>
<td>50,344</td>
<td>8,649</td>
<td>867,844</td>
</tr>
<tr>
<td>April</td>
<td>810,140</td>
<td>54,921</td>
<td>3,453</td>
<td>861,608</td>
</tr>
<tr>
<td>May</td>
<td>809,067</td>
<td>53,124</td>
<td>3,985</td>
<td>859,783</td>
</tr>
<tr>
<td>June</td>
<td>811,711</td>
<td>53,892</td>
<td>3,558</td>
<td>854,045</td>
</tr>
<tr>
<td>July</td>
<td>812,804</td>
<td>41,471</td>
<td>6,069</td>
<td>848,206</td>
</tr>
<tr>
<td>August</td>
<td>814,684</td>
<td>49,444</td>
<td>11,348</td>
<td>852,780</td>
</tr>
<tr>
<td>September</td>
<td>817,158</td>
<td>61,391</td>
<td>14,893</td>
<td>863,656</td>
</tr>
<tr>
<td>October</td>
<td>820,792</td>
<td>65,525</td>
<td>21,701</td>
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a Monthly averages. The annual total refers to 1 July.
b Monthly averages.
CHO AND RETHERFORD ATTEND FERTILITY ESTIMATION CONFERENCE IN SANTIAGO

East-West Population Institute Director Dr. Lee-Jay Cho and Assistant Director for Professional Development Dr. Robert D. Rutherford were among the participants in a seminar on the evaluation of methodologies for estimating fertility from census data. Sponsored by Centro Latinoamericano de Demografía (CELADE) and held 8–12 September in Santiago, Chile, the conference was designed to examine the relative strengths and weaknesses of several methods of estimating age-specific birth rates.

Methods discussed were (1) the Mortara, Arretx, and Arriaga methods, which are based on determining average number of children ever born by age, using either period data from one census or cohort data from two or more censuses; (2) the Brass method, a technique that uses data on children ever born and reported births during the past year; and (3) the own-children method, a reverse-survival technique based on a single census that produces estimates of age-specific birth rates for each year or for several longer periods of the ten years prior to enumeration.

The own-children method was successfully applied to the 1972 Census of Paraguay—the first time it had been used in a Latin American country. Results showed that although urban fertility fell between 1962 and 1972, rural fertility remained high.

Seminar participants noted that the own-children method was particularly strong where age reporting was good but that other techniques might be more useful elsewhere, especially in certain African countries, where the Brass method was claimed to be more appropriate. The Mortara, Arretx, and Arriaga methods have been successfully applied, especially in Latin America, but they do not provide measures of a trend if based on a single census.
AUSTRALIA AND NEW ZEALAND MAKE PLANS FOR 1976 QUINQUENNIAL CENSUSES

Correspondents Anthony Hart of the Australian Bureau of Statistics (ABS) and J.W. Jamieson of New Zealand's Department of Statistics are both involved in plans for censuses those countries will conduct next year. New Zealand will hold its 1976 Census of Population and Dwellings on 23 March; the Australian 1976 Census of Population and Housing is scheduled for 30 June. Reports of preparations for the two censuses appear below.

AUSTRALIA

Two pretests were carried out in Sydney in 1974—one in July and the other in November. An additional pretest in February of this year was held in Melbourne, and a final one was conducted in August in conjunction with a Special Census of a country center, Wagga Wagga, New South Wales.

Schedule development

Two schedules were tested in the November 1974 pretest. The first, a booklet type, performed satisfactorily and required only a little extra work to incorporate required changes. These changes included the addition of two dwelling questions, a life assurance question (as required by Cabinet), and preschool and child care questions. The second schedule tested was a modified version of one developed in the U.K. that combines the advantages of the old-style sheet and the 1971 booklet. This schedule proved to be about 30 percent cheaper to print than the booklet and also incurred lower packaging and freight costs. Its performance in the field was unacceptable but it showed promise of better performance. A publicity brochure was also tested successfully. The brochure helped to overcome initial hostility and minimized the number of telephone inquiries.

The Melbourne pretest in February again tested the modified U.K. schedule. Four new questions were successfully tested: date dwelling was built, sewerage, life assurance, and nondwelling (i.e., dwelling in same building as hospital, school, church, shop, office, factory, or other nondwelling). The reworded questions about relationship to head of household and racial origin were changed back to the more successful previous form. The publicity brochure was again tested and the results obtained in Sydney were confirmed.

The Special Census of Wagga Wagga in August was used to validate the documentation and control procedures of the field system. The census mapping program is proceeding according to schedule, and all census maps are being produced at standard scales. Maps of collection districts in major urban centers will be available to the public for purchase, as were those from the 1971 census. As usual, maps of all collection districts will be available for inspection at ABS offices. The Field Organization Subsection is also working on such matters as developing a system using modular containers for distributing materials to field staff; the final validation of procedures and documentation for selecting census collectors; and investigation of special collection problems involved in enumerating aborigines and immigrants.

Processing

A number of important changes have been made to the census processing system. For the first time ABS will conduct a formal processing test prior to the census. This test will be held in conjunction with the Wagga Wagga Special Census, and its major function will be to test processing procedures to obtain information about coding rates and learning curves. Such knowledge will aid in staff and money allocation for the 1976 census. Another innovation will be the selection of processing staff using a specially devised work task test designed by ABS. The test will be used in conjunction with interviews.

The first two processing stages will be decentralized in each state. The first stage, Preliminary Check, will replace the former Field Counts and will produce statistics on the number of males, females, and persons, occupied private and nonprivate dwellings, and unoccupied dwellings. This information should be available about three months after the census. The second stage, Preliminary Characteristics, will include all the Preliminary Check data as well as age, marital status, and birthplace (Australia, U.K., Other, and Not Stated). This second stage will involve manual transcription onto a machine-readable "OMR" document, which will be processed in Sydney. Preliminary Characteristics data will be available about six months after the census.

Centralized processing will take place in Sydney and will be aided by an in-house computer system consisting of four ICL 2903s together with a number of Universal Document Readers and Visual Display Units (VDUs). The first-stage amendment will be effected by batch amendment via Keyboard Stations. The second-stage amendment will involve the VDUs in an interactive on-line editing system.

The Preliminary Check and Preliminary Characteristics stages and their output will be followed by the Priority Sample data due about 9 months after the census. The sample will be similar to the 1971 sample except that sampling fractions will vary according to the size of the state or territory. Standards, small area data, and detailed tabulations will become available 12 to 15 months after the census. All print-outs produced will also be available in the form of microfiche, and considerable emphasis is being placed on the production of subtitles, magnetic tape matrices, and summary files. ABS is investigating which methods of presenting census data are most useful.

Evaluation

Evaluation procedures for the 1976 census are presently being improved. ABS is designing a Postenumeration Survey (PES) to measure accuracy of response to selected questions. A test of the survey is planned for late 1975. ABS also expects to run Person and Dwelling Coverage Checks and do some reverse record checking to measure the underenumeration of some groups of the population.

Publicity

Publicity will play a large part in both the lead-up to and the conduct of the census. A four-stage publicity program has been planned: a public relations campaign directed at
"influentials" and "opinion leaders"; a simulated census conducted in schools in areas with high proportions of immigrants, aborigines, and people of lower socioeconomic status; a lift-out booklet inserted in a leading magazine; and an advertising campaign directed at all persons aged 15 and over with special emphasis on ethnic groups.

Finally, Tony Hart says he hopes to be able to conduct experiments on aspects of some geocoding methods during the 1976 census, but no definite plans have yet been made.

NEW ZEALAND

Preparations for the quinquennial Census of Population and Dwellings are well under way, according to J.W. Jamieson, who is Director of the Population and Labour Statistics Section of New Zealand's Department of Statistics. Major decisions already made cover the organization, general content, and principal methodology of census activities during the next two or three years. Like its immediate predecessors of 1966 and 1971, the 1976 Census of Population and Dwellings also introduces some important developments.

Questionnaire content and design

A development within the Department of Statistics has had a significant effect on questionnaire content. With the establishment of Household Sample Surveys, it has become possible for some suggested population census questions, needing lengthy treatment for effective answers by self-respondents, to be more appropriately asked in Household Survey interviewer questionnaires. Decisions made in light of this alternative contribute in part to the smaller number of census questions for 1976.

Government departments, universities, and national organizations were systematically approached for suggestions on census topics. Census officials also studied reports of 1971 census field staffs. Following the detailed appraisal, a draft content was approved for trial purposes.

For the first time in census planning history, an outside pilot test of the preliminary questionnaire was held under standard pretest conditions. A large provincial city (Hamilton), a medium-sized township (Feilding), and a metropolitan area (Dunedin) served as locations for the May 1975 tests. Analyses of respondents' answers and invited comments were made and changes incorporated in the final drafts. The layout of the questionnaire was changed to bring the "Notes for Guidance" closer to the questions to which they refer.

Date of 1976 census

Another decision settled the 1976 census date as Tuesday, 23 March 1976. The date was determined largely by the timing of the Easter holiday period and by coincidence is the same day of the week and date as for the 1971 census.

Organizational developments

A permanent Population Census Development Section has been established to study and recommend organizational, planning, and methodological improvements for the census of 1981. Organizational changes in control of census field operations have been made to promote faster enumeration, improve coverage, and reduce the overload on many enumerators. Enumerators, who are officers of the New Zealand Post Office, will now be responsible for an average of fewer than twenty civilian subenumerators, the main distribution and collection agents, instead of the previous disproportionate responsibility in some large centers for up to 200 subenumerators. An overdue reduction in size of subenumerators' districts should also speed enumeration. All enumerators have now been appointed and the necessary enumerators' maps are currently being drawn as the basis for further subdivision of the country into subdistricts and mesh blocks.

The channel of communication and responsibility between the district enumerators and the census staff in Wellington is being improved by the employment of a group of departmental Area Liaison Officers, each covering a number of enumerator districts. The liaison officers will provide guidance in training and publicity requirements and will assist in problem areas.

Finally, two new developments relate to postcensus processing. Clerical processing centers will be established in two of the larger cities (Lower Hutt and Christchurch), each responsible for approximately half the entire work load. Also, an entirely new venture in census processing is the proposed use of optical character reading (OCR) methods of data capture to facilitate the processing. Because information about the dwelling and up to four personnel input records can be accommodated on one OCR form, the transfer to magnetic tape should be much accelerated. One OCR form will give a prospectus of a complete household for about two-thirds of all dwellings in New Zealand.

Interensal surveys to augment census data

Since the last quinquennial census of population and dwellings, New Zealand has developed all the apparatus necessary for Household Survey operations. The first survey, for the period 1 July 1973 to 30 June 1974, was used as a major source of information for the revision of the Consumers Price Index. In addition to the results needed for this revision, the collection was designed to be wide enough to allow for classification of expenditure by types of household — for example, by income, by age of head of household, and by size of household.

For the revision of the Consumers Price Index, it was necessary to establish an all-New Zealand average household expenditure. The system chosen was continuous collection of data from a subsample of households that maintained records for brief successive periods. Household members aged 15 years and over were given diary booklets and asked to keep detailed records of their spending for a period of two weeks and to give information on their major and recurring household and personal expenses during the preceding twelve months. This kind of survey is a continuing activity and results will be published annually.

Because of the nationwide nature of the collection and the consequent need to recruit and train interview staff in the centers where sample households are located, the department has built up an organization geared to the collection of information from private households. The organization is now being used to collect data in the wider field of social statistics as well as to continue the Household Sample Survey. In this extension of activity the department's Household Survey Unit acts as a contractor to other government departments, and plans are in hand for surveys of such subjects as leisure activities, use of educational opportunities, housing preferences, energy consumption, use of medical facilities and health-related behavior, travel to and from work, internal tourist travel and holiday activities, and labor force mobility.

Completion of a work program of this size is not a short-term project, and an Interdepartmental Liaison Group has been established to coordinate the many survey requests.
by Alice D. Harris

New Philippines research monograph series

The National Census and Statistics Office (NCSO) of the Republic of the Philippines recently started publication of a series of research monographs on various aspects of Philippine demography. Monograph no. 1, Estimates of the Life Table Functions of the Philippines: 1970, illustrates the methodology used in constructing a life table and presents two sets of life tables—abridged and complete—for Filipino males and females in 1970. The censuses of 1960 and 1970 as well as vital registration figures for 1968-72 were used to compile the tables. The second and third monographs, Age and Sex Projections for the Philippines by Province, 1970-2000 and Population Projections of Cities and Municipalities in the Philippines, 1970-2000, provide subnational population projections for the use of social and economic development planners. These monographs also appeared as Volumes 2 and 3 of Population Dimensions of Planning: Guidelines and Population Projections for the Philippines, 1970-2000, published by the National Economic and Development Authority. A feature of both is the presentation of the methods employed in determining the base population and the ratio method for making the projections. The monographs have a great potential for use as demographic as well as planning tools. Funding assistance for the series is being provided by the United Nations Fund for Population Activities. To get copies of any of the research monographs, contact the National Census and Statistics Office, Manila, Republic of the Philippines.

Recent census publications from India

Mr. K.K. Chakravorty, Assistant Registrar General, Government of India, writes us that several new census publications are available from the Office of the Registrar General, 2-A Mansingh Road, New Delhi, 110011, India. Series 1, Part II A, no. i, General Population Tables (US$5.04 or £1.64); no. ii, Union Primary Census Abstract (US$3.15 or £1.05); and Series 1, Part IV B, Housing Tables (US$2.88 or £0.93) are ready for delivery. Also available is a special monograph by G.K. Mehrotra, Birth Place Migration in India (US$5.04 or £1.64). The Indian Centenary Atlas will be ready by the end of 1975 and will cost US$21.60 or £7.00.

Alice Harris is Resource Materials Specialist at the East-West Population Institute. She and her staff maintain the Institute’s collection of documentation and reference works, including a sizable body of census data. Ms. Harris also advises documentation interns from Asian and Pacific countries who may spend several months at the Institute learning how to organize a population library.

Ms. Harris is on the Board of Directors of the Association of Population/Family Planning Libraries and Information Centers (APILIC), an international professional organization. In addition to her qualifications as a librarian, she recently completed her master’s degree in geography, with an emphasis on Pacific Island populations, at the University of Hawaii. She welcomes information from readers about new publications in the census field and is happy to odd review copies of such publications to the Institute’s permanent Resource Materials Collection.

Taiwan reports

Our correspondent from the Taiwan Bureau of Statistics, Mr. Tun-yih Lu, reminds readers that the Bureau has available the latest of its Monthly Bulletin of Statistics (in English), the National Income of the Republic of China (a quarterly estimate), Survey Report on Personal Income Distribution of the Taiwan Area, 1974, and Yearbook of Labor Statistics of the Republic of China, 1975. If you are interested in receiving any of these items, please write to the Bureau of Statistics, Directorate-General of Budgets, Accounts and Statistics, Executive Yuan, Taipei, Taiwan.

ISPC begins international research document series

The International Statistical Programs Center (ISPC) of the U.S. Bureau of the Census has begun to issue a new series of international research documents under the general direction of Mr. Samuel Baum, Assistant Chief for Demographic Research. Dr. Eduardo Arriaga, Chief of ISPC’s Data Evaluation Branch, is the author of Population and Economic Planning, the first to be published. He explores the relationship of economic development to population age structure and population growth rates. Countries that have achieved a high rate of industrialization in the past have had slower population growth and favorable age distributions, says Arriaga, and countries in the process of mobilizing for industrial development will benefit by slowing the birth rate and thus achieving a more adult age structure. Arriaga presents formulas for predicting the rate at which per capita national product will grow given various population growth rates.


Population headliners

The Population Division of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) recently started a monthly Population Headlines service with news for and by its population correspondents. Readers will find census news in it under several categories. Although Population Headlines is not an “official” United Nations publication, it performs a useful function in getting timely information to people in the ESCAP region. If you, or the agency you represent, would like to contribute news or receive the multiltitled publication, please write to the Population Division, ESCAP, United Nations, Sala Santitham, Bangkok, Thailand.

Papua New Guinea census bulletins

Papua New Guinea, which became an independent nation on 16 September 1975, took its second population census in July 1971. The results of this census have been issued in a series of bulletins throughout 1974-75. Bulletin 1 reports on population characteristics of the whole country, Bulletins 2-19 cover population characteristics of each of the 18 districts, and Bulletins 20-27 describe the population of the eight major urban areas. The population was classified into three sectors for census purposes: rural villages, rural nonvillages, and urban areas. All the urban areas had populations of 10,000 or more in 1971. A complete enumeration
could not be attempted because of difficult terrain, lack of communication, and shortage of trained personnel. The pattern used in the 1966 census was repeated in 1971: a 10 percent sample of the traditional rural village population was taken, and the other sectors were fully enumerated. Both self-enumeration and interviews were used to acquire the census data.

Each bulletin of the Papua New Guinea series includes information on the following population characteristics: age (by single and five-year groups), sex, marital status, race, literacy, number of school years completed, occupation, and work force status. Maps for each district and urban area are provided in the bulletins. A special postenumeration survey was also conducted in 110 villages out of the 1,280 included in the 10 percent sample to determine the extent of errors caused by nonresponse or internal migration. The adjusted data were used to compute the population estimates used in the bulletins. The methodology employed for adjustment will be described in a census monograph to be published later by the Bureau of Statistics. To obtain copies of any or all of these bulletins, please write to the Bureau of Statistics, P.O. Box 2032, Konedobu, Papua New Guinea.

Results of New Zealand's 1971 census
New Zealand took its most recent census on 23 March 1971. Since then the Department of Statistics in Wellington has published several of the volumes that will constitute the Census of Population and Dwellings, 1971. Those that have been issued are Volume 1, Increase and Location of Population (1972, NZ$1.85); Volume 2, Ages and Marital Status (1974, NZ$1.35); Volume 3, Religious Professions (1974, NZ$8.55); Volume 4, Industries and Occupations (1975, NZ$2.60); and Volume 5, Incomes (1975, NZ$1.60). Other topics to be covered in later volumes are race, the Maori population, dwellings, households, and a general report. A summary of demographic trends appears in the first volume.

New Zealand had a population of 2,862,631 in 1971. The annual growth rate between 1966 and 1971 was 1.4 percent, the third lowest growth rate since information was first recorded in 1878. Factors contributing to the slowed population increase during the intercensal period are more deaths, fewer births, and less in-migration. In addition to the numerous tables, Volume 1 contains excellent population distribution maps which clearly reveal a growing trend toward urban concentration in New Zealand.

Other annual statistical compilations of the Department of Statistics that should interest demographers are Population and Migration, Population Projections, and Vital Statistics. A leaflet describing all these publications and how they can be purchased is available from the Government Bookshop, Mulgrave Street, Private Bag, Wellington, New Zealand.

South Pacific Commission statistical bulletins
Population statistics for the Pacific islands are found in the Statistical Bulletin of the South Pacific, published by the South Pacific Commission (SPC) in New Caledonia. The latest issued is Population 1974, published in September 1975. The data from which the tables are compiled are a combination of the latest relevant census figures and intercensal estimates. Some of the census data have been reworked to permit international comparability. Tables show data on age, sex, marital status, geographical origin, average number of children born alive, and average number still surviving per woman. Additional breakdowns include ethnic origins and rural or urban residence. Other statistical bulletins cover retail prices, overseas trade, and the labor force. The bulletins appear about twice a year and may be obtained by writing to the South Pacific Commission, Post Box D.5, Noumea, New Caledonia.

World Fertility Survey records achievements
The World Fertility Survey (WFS), an international population research program initiated by the International Statistical Institute (ISI) in 1972, summarizes the activities of its first three years in a progress report, The World Fertility Survey: The First Three Years, January 1972–January 1975. An official report, it defines the scope, purpose, and organization of the program, and the specific activities of what have been called the pre-project phase, the project development phase, and the project implementation phase. Since WFS is making important contributions to countries (continued on page 4)